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MINING IN ALASKA BEFORE 1867

It has generally been assumed that the Russians in Alaska were either indifferent or ignorant of the mineral resources of that territory. That they were not indifferent may be proved from the fact that the desire to find precious metals was one of the reasons why Peter the Great sent out voyages of discovery. The men who followed Bering to America made careful inquiries of the natives as to the existence of metals and minerals on their islands. When the Russian American Company was organized in 1799 it demanded the exclusive right to all the underground riches of Alaska. One may with equal ease refute the charge of ignorance. At the time of the transfer of the territory to the United States gold had been discovered, native copper found, and coal mines opened. Graphite was known to exist on Atka Island, red ochre on Krenitizin, black obsidian and porphyry on Umnak, naphtha and amber on the Alaska Peninsula. Copper had been located on Unalaska, Copper Island, Cook Inlet, and the Copper River. Each year the natives came down that stream and sold quantities of that metal to the Russians, but would not show them the place it came from. In the same manner the natives of Cook Inlet offered mica to the traders but refused to disclose the source of the supply. The knowledge of the mineral resources was not wholly derived from the natives. Reliable information was obtained from the writings of Father Veinaminov, from the accounts of the more intelligent of the naval officers, from the bulletins of the agents of the Imperial Academy of Sciences, especially that of Vosnosenski, who stayed five years (1840-1845) in the Northwest making a natural history collection, and from the special reports of the scientists and mining engineers, such as H. J. Holmberg, who made a mineral survey of Kodiak., Peter Doroshin who spent five years in prospecting for gold and coal, and Ialmar Furuholm who came out to Alaska in 1850 or 1851 and remained ten years in the employ of the company prospecting and superintending the mine on Kenai. The question one naturally asks: if the company knew so much about the mining possibilities of Alaska why was so little done in developing the industry? The answer is that it was too much occupied with the fur trade.

The gradual extermination of the sea-otter and the discovery of gold in California were two factors that greatly influenced the company to give serious attention to mining. In 1848 (1849) it sent out to Alaska Peter Doroshin, a mining engineer, or geognost as he

was then called. He reached Cook Inlet late that year but not too late to wash out a few pans of sand and find a few colors. He took up the work in 1850 and commenced prospecting in earnest on the Kenai Peninsula, near the mouth of the Kaknu River. He had, all told, twelve men to assist him, and the number of working days for that season were not more than forty-nine; so that under the circumstances he could not have been expected to accomplish a great deal. He reported that everywhere he dug he found colors. He returned in 1851 with the intention of going up the Kaknu and two other streams for the purpose of tracing the deposits to their source. Although he put in sixty-six days, in his investigations he could not reach the mountains where he hoped to locate the mineral veins. In his report he states that the farther up he went the larger were the grains of gold but nowhere was it in paying quantities. He should have liked to continue his researches for another year or two had the company been willing.

The following year, 1852, Doroshin was set to work to look for coal. During that summer he explored a large part of the territory and located many of the mines known today. He shipped the specimens which he dug out to the Mining Department of St. Petersburg where they were analyzed. The first coal vein examined was at Port Graham, Kenai. It was an eight foot vein and the samples analyzed:

Volatile matter	45.87
Fixed Carbon	42.91
Ash	12.22
Coke	45.13
Heat units ¹	4,294.

On the way from Port Graham to Kachemak he inspected several beds of lignite and passed them by as of little value. But on the northwestern part of Kachemak Bay he found coal which seemed promising. It analyzed:

Volatile matter	48.53
Fixed Carbon	38.91
Ash	12.55
Coke	51.47
Heat Units	4,131.

From Kachemak he sailed north along the eastern shore of the Inlet to its head, crossing the mouths of the streams but not entering them, thence down the western shore as far as Kamishak Bay.

¹Probably calories.

Here he left the boat and struck out over the mountains to Lake Iliamina, making notes on the geologic formation of the country as he went along. On the lake there was a boat to take him down the Kvichak River and some distance into the bay of that name and from there up the Naknek River and lakes and the Mishket² River to the rapids. At this point he left his boatmen and crossed over the mountains and came to Katmai. In taking the route he did Doroshin was prevented from examining the coal in Kanikagluk² Bay (Kukak?), east of Katmai. He, therefore, sent men thither for samples which, when analyzed, gave this result:

Volatile matter	34.45
Fixed carbon	52.44
Ash	13.11
Coke	65.55
Heat Units	5,774.

He was quite enthusiastic about this coal which he regarded as the best in the territory.

Continuing his investigations along the peninsula, Doroshin observed many veins of coal and lignite of minor importance. In one place, probably in the region of Chignak, he discovered naphtha and, what he believed to be natural gas, but he was not certain. He spent some little time at Unga inspecting the coal deposits on that island and concluded that they were not worthy of development because of the poor quality, the high cost of mining, and danger in transportation owing to the large amount of pyrites in the coal. He had planned to go to Port Moller but was prevented because of lack of time. He did the next best thing and sent for specimens. Doroshin himself sailed down to Paylof Bay and from there returned to Unga. Here he took ship going for Sitka and landed at this place about the middle of October, 1852. The samples from Port Moller, taken from two different veins, analyzed as follows:

Volatile matter	61.57
Fixed carbon	37.18
Ash	1.25
Heat Units	4,472
and	
Volatile matter	50.73
Fixed carbon	39.74
Ash	9.53
Heat Units	4,443.

²The names of places have changed considerably since Doroshin's day and it is rather difficult to identify them.

On making inquiries he was told that there was coal on Tigalda Island and on Norton Sound but he was unable to obtain samples from either of these places. From one of the ships in search of Franklin he secured a few chunks of coal which were taken from a vein in the neighborhood of Cape Lisburne. He also had sent to him specimens from Korovin Bay, Atka, which showed on analysis that it contained:

Volatile matter	52.41
Fixed carbon	45.28
Ash	2.53
Heat units	4,893.

In the region of Sitka Doroshin also made investigations and located several small veins of coal. He had analyzed the coal from Kotznahoo Inlet, Chatham Strait, and got encouraging results.

Volatile matter	38.08
Fixed carbon	50.73
Ash	11.19
Heat units	4,800.

He was of the opinion that a better grade and thicker veins of coal were to be found in southeastern Alaska, judging by the Canadian product. He made a special trip to inspect the mine in Winterhausen Bay (Winter Harbor?), Vancouver and the samples which he brought back analyzed:

Volatile matter	38.67
Fixed carbon	44.00
Ash	17.03
Heat units	5,009.

Doroshin returned to Russia towards the end of 1854 or early in 1853.⁸ He at once submitted his report to the company and urged upon it to develop the coal beds at Port Graham. On the strength of this recommendation, coupled with the demand for coal in San Francisco, the company decided to venture into the coal mining industry. Work was begun in 1855, a pump was put in in 1857, the buildings were completed in 1858, and by 1859 there was a tunnel seventy feet long. In 1860 a fire wiped out the whole plant and ruined the machinery.

After five years of trial the company found that it had lost money. There were many reasons for the failure. The company was

⁸Doroshin laid his specimens before Professor Heppert of Breslau, who said that the coal from Cook Inlet belonged to the miocene formation of the tertiary period.

working with the view of obtaining immediate returns and not of developing a mining property. By 1860 it had not yet touched the principal vein of coal. Then again the company did not employ skilled miners nor make use of the best machinery. The men who worked in the mines were Siberian soldiers on garrison duty in Alaska. They were independent, worked or idled as they pleased. They knew nothing about mining when they came to Alaska and by the time they had learned something their term of military service, five or seven years, had expired and they departed. They were paid by the day and not by the ton and as a consequence they wasted much time. It was figured out that at one time the mine had on its pay roll 131 men and the daily output was from 30 to 35 tons. When the coal had been mined it was not sorted but all dumped together in the open.

The officers of the company on the spot were in doubt as to the real value of the coal. Some thought it was worthless and others, like the engineer, Fraser, on the steamer *Alexander II.*, were of the opinion that for steaming purposes 10 tons of Kenai was equal to 7 tons of English coal; and if the Alaska coal were sorted 10 tons would equal 8 tons of English. The only markets available at that time were San Francisco and Hong Kong. Five hundred tons were shipped to California and were there sold for six kopeks the prood, or about \$1.75 a ton. At this selling price the company was losing heavily, for it cost much more than that just to mine the coal. During the years 1857-1860, the annual output of the mine was about 920 tons, at an actual cost in wages, not counting the outlay on the investment, buildings, ships, office expenses, etc., of 38,480 rubles, or a little more than 41 rubles (assignats) per ton, equivalent to about \$15 (?) of American money. At that time, 1860-63, at Hong Kong Japanese coal was selling for \$5, Sidney coal for \$8 and English coal for \$15 the ton. Kenai coal could not compete on such terms.

After the buildings had burned down the company was in doubt as to how to proceed in the future. Ialmar Furuhelm came out from Alaska in 1862 to report on the situation. After several conferences with the directors of the company Furuhelm offered to lease the mine, provided he were allowed a free hand in every way. An agreement was soon reached, according to which Furuhelm was given exclusive control for seven years, from the day of signing the contract, over all the underground resources of Alaska, the right to sell his metals and to buy his machinery and goods where he pleased without paying duty of any kind, to cut whatever timber he needed, to make use of the streams, to carry the flag of the company on his ships, to hire his

workmen wherever he liked. In short neither the company nor the government could interfere with him in any way. In return he bound himself to pay the company, beginning with the second year, five per cent of the exported product, and this sum to be increased each year by one per cent. At the end of seven years the mines and all underground improvements were to revert to the company without compensation, and the buildings, machinery, ships etc., if Furuhelm should decide to sell them, the company promised to buy at a price to be mutually agreed. This arrangement was concluded early in 1863 but it was not put into force because at that time it was uncertain whether the company would have its charter renewed.

The discovery of gold in Oregon and British Columbia raised the question whether this metal might not also be found in Alaska. In 1863 the Russian minister in Washington called his government's attention to that fact. That same year there was a rumor that gold had been found on the Stikine River, and the company's officers became excited and, fearing a stampede of American miners, appealed to the government for a man-of-war. In 1865 the Russian minister wrote again to St. Petersburg reporting a conversation with Professor Whitney, geologist of California, who assured him that there must certainly be gold in Alaska because the geologic coast formation of that territory is the same as that of other parts of the Northwest where gold had been discovered. Whitney was willing to go to Alaska to investigate and the minister urged that he be commissioned to do so. The following year, 1866, it was reported in the Russian papers that some men in Sitka while digging a hole for a telegraph post accidentally found gold. The Russian government, however, had decided long before this to get rid of Alaska, partly because it had become an economic burden and partly for fear should gold be discovered in large quantities the American miners would rush in faster than they could be kept out and this situation might bring about bad feeling between the United States and Russia. These were some of the reasons why Alaska was sold and why all the mining propositions died an untimely death.

If the plans of Furuhelm had been allowed to work out and if Whitney had been sent to investigate, perhaps the mineral resources of Alaska would have been heard of long before they actually were.

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